



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
09 940,058	08 27 2001	James J. Franzen	D A0A72 XER 2 0423	4406

7590

06 19 2003

FAY, SHARPE, FAGAN, MINNICH & McKEE, LLP
1100 Superior Avenue, Seventh Floor
Cleveland, OH 44114-2518

EXAMINER

STOCK JR, GORDON J

ART UNIT	PAPER NUMBER
----------	--------------

2877

DATE MAILED: 06/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/940,058

Applicant(s)

FRANZEN ET AL.

Examiner

Gordon J Stock

Art Unit

2877

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-8, 10, and 12-19 is/are rejected.
- 7) ☒ Claim(s) 4, 9 and 11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 August 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Drafting of Patent Application (PTO-414)
- 3) ☐ Notice of Drafting of Patent Application (PTO-415)
- 4) ☐ Interview Summary (PTO-413) Paper No(s)
- 5) ☐ Notice of Drafting of Patent Application (PTO-415)

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. **Claims 8, 14, 15, 18, and 19** are rejected under 35 U.S.C. 102(b) as being anticipated by **Nishikawa (4,943,735)**.

As to **claims 8 and 14**, Nishikawa discloses the following in an apparatus for measuring concentration of liquid developer: extracting a sample of developer; measuring color characteristics, the transmittance, of the developer sample; and estimating the toner concentration based on the measured color characteristic (Fig. 1; col. 3, lines 20-67). In addition, Nishikawa discloses leveling the sample (col. 6, lines 10-30).

As to **claims 15, 18, and 19**, Nishikawa discloses the following in an apparatus for measuring concentration of liquid developer: measuring a color characteristic, transmittance, of the developer; comparing the measured color characteristic with a pre-determined relationship between the color characteristic and the toner concentration; and estimating the toner concentration based on the comparison (Fig. 1; col. 3, lines 20-67). In addition, Nishikawa discloses placing a sample of the developer into a sample container (Fig. 1); and measuring the color characteristic, the transmittance, of the sample in the sample container (col. 3, lines 20-67); and leveling the sample of the developer in the sample container (col. 6, lines 10-30).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1-3** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Mosher et al. (5,512,978)**.

As for **claims 1-3**, Mosher in a replenishing system discloses the following: a developer sample container; a spectrophotometer; estimating the toner concentration based on the measured spectrophotometric data and a pre-determined relationship between the spectrophotometric data and the toner concentration (Fig. 2, 2; 2a-c; Fig. 3; col. 7, lines 1-67); a surfactant or solvent (col. 8, lines 40-67); a pre-determined empirical relationship between toner concentration and spectrophotometric data (col. 7, lines 45-67). Mosher is silent concerning an actual processor. However, the Examiner takes Official Notice that processors are well known in the art for processing data for calculations. It would be obvious to one skilled in the art at the time the invention was made that the FTIR monitoring system comprised a processor for calculating concentration results from the spectral information.

5. **Claims 5-6** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Mosher et al. (5,512,978)** in view of **Fujita et al. (4,273,843)**.

concerning a correction for usage or printed sheets. Fujita in a method of detecting toner

Art Unit: 2877

concentration teaches that an inaccuracy occurs from toner usage by showing toner concentration changes from amount of copies printed (col. 2, lines 4-55; Fig. 4). Therefore, it would be obvious to one skilled in the art at the time the invention was made to incorporate a correction for usage and number of sheets printed, for an inaccuracy occurs from not taking into deterioration of the developer.

6. **Claim 7** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Mosher et al. (5,512,978)** in view of **Ito et al. (5,342,722)**.

As for **claim 7**, Mosher discloses everything as above (see **claim 1**). However, he is silent concerning a leveler. Ito in a toner resin composition teaches tapping the toner for dispersion (col. 12, lines 10-30). Therefore it would be obvious to one skilled in the art at the time to have the apparatus include a leveler that taps the toner for adequate dispersion.

7. **Claim 10** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Nishikawa (4,943,735)** in view of **Mosher et al. (5,512,978)**.

As for **claim 10**, Nishikawa discloses everything as above (see **claim 8**). In addition, Nishikawa discloses the measured color characteristic, transmittance, is related to the toner concentration (Fig. 1; col. 3, lines 20-67). However, he does not disclose an empirical relationship. Mosher in a replenishing system discloses an empirical relationship between spectral information and concentration (col. 7, lines 40-67). Therefore, it would be obvious to one skilled in the art at the time the invention was made that a comparison was made, for the toner concentration is calculated from an empirical relationship between concentration and

Art Unit: 2877

8. **Claims 12-13** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Nishikawa (4,943,735)** in view of **Fujita et al. (4,273,843)**. As for **claims 12-13**, Nishikawa is silent concerning a correction for usage or accounting for usage. Fujita in a method of detecting toner concentration teaches that an inaccuracy occurs from toner usage by showing toner concentration changes from amount of copies printed (col. 2, lines 4-55; Fig. 4). Therefore, it would be obvious to one skilled in the art at the time the invention was made to incorporate a correction for developer usage and therefore accounting for developer usage, for an inaccuracy occurs from not taking into deterioration of the developer.

9. **Claims 16-17** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Nishikawa (4,943,735)** in view of **Fujita et al. (4,273,843)**.

As for **claims 16-17**, Nishikawa discloses everything as above (see **claim 15**). However, he is silent concerning an accounting for developer usage or correction for usage or printed sheets. Fujita in a method of detecting toner concentration teaches that an inaccuracy occurs from toner usage by showing toner concentration changes from amount of copies printed (col. 2, lines 4-55; Fig. 4). Therefore, it would be obvious to one skilled in the art at the time the invention was made to incorporate a correction for usage and number of sheets printed, for an inaccuracy occurs from not taking into deterioration of the developer.

Allowable Subject Matter

10. **Claims 4, 9, and 11** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base

Art Unit: 2877

As to **claim 4**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in an apparatus for measuring toner concentration in a developer contained in a developer housing, the particular empirical relationship, in combination with the rest of the limitations of **claim 4**.

As to **claim 9**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a method for measuring toner concentration mixing the developer sample with a solvent or surfactant prior to measuring color characteristics, in combination with the rest of the limitations of **claim 9**.

As to **claim 11**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a method for measuring toner concentration in a developer the particular comparing step, in combination with the rest of the limitations of **claim 11**.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

U.S. Patent 3,872,825 to Davidson

U.S. Patent 4,026,643 to Bergman

U.S. Patent 4,451,135 to Okumura

U.S. Patent 5,359,437 to Hibi

U.S. Patent 6,535,700 to Caruthers

Fax/Telephone Numbers

discussion with a phone interview, then the fax should

Art Unit: 2877

1) Contain either a statement "DRAFT" or "PROPOSED AMENDMENT" on the fax cover sheet; and

2) Should be unsigned by the attorney or agent.

This will ensure that it will not be entered into the case and will be forwarded to the examiner as quickly as possible.

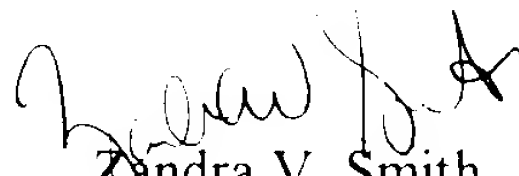
Papers related to the application may be submitted to Group 2800 by Fax transmission. Papers should be faxed to Group 2800 via the PTO Fax machine located in Crystal Plaza 4. The form of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CP4 Fax Machine number is: (703) 308-7722

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gordon J. Stock whose telephone number is (703) 305-4787. The examiner can normally be reached on Monday-Friday, 10:00 a.m. - 6:30 p.m.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

gs

June 16, 2003


Zandra V. Smith
Primary Examiner
Art Unit 2877